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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.               | CONFIRMATION NO.       |
|---|-------------|----------------------|-----------------------------------|------------------------|
| 10/757,157  | 01/13/2004  | Michael Humburg      | (WW) 29516 P US                   | 3536                   |
| 7590 05/02/2007   |             |                      |                                   |                        |
| M. Robert Kestenbaum<br>11011 Bermuda Dunes NE<br>Albuquerque, NM 87111 |             |                      | EXAMINER<br>BERTHEAUD, PETER JOHN |                        |
|   |             |                      | ART UNIT<br>3746                  | PAPER NUMBER           |
|   |             |                      | MAIL DATE<br>05/02/2007           | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/757,157

Applicant(s)

HUMBURG, MICHAEL

Examiner

Peter J. Bertheaud

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,7,8 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) 3,6 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7,8 and 10-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 February 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This office action is in response to the amendments of 1/04/2007. It is noted that claims 1, 2, 4, 5, 7, 10, 11, 13, and 14 have been amended and claims 3, 6, and 9 have been canceled. In making the below rejections and/or objections the examiner has considered and addressed each of the applicant's arguments.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 5, 7, 8, 10, 11, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spakowski 6,186,118 in view of Oh 6,152,710.

Spakowski discloses a pump apparatus comprising an inlet chamber 34, an outlet chamber 62, a first valve arrangement 66, between the inlet chamber and the outlet chamber, which permits a fluid exchange substantially only from the inlet chamber 34 to the outlet chamber 62, a displacement piston element 30 which in a first piston region has a first displacement surface (see front/right side of 30 in Fig. 1) effective upon movement of the displacement piston element in the direction toward the first piston position, and in a second piston region has a second displacement surface (see back/left side of 30 in Fig. 1) effective for movement of the displacement piston element in the opposite direction toward the second piston position, wherein the first

displacement surface is greater than the second displacement surface (see configuration in Fig. 1), and which is movable between a first piston position (its furthestmost right position) in which it minimizes the volume of the inlet chamber 34, and into a second piston position (its furthestmost left position) in which it minimizes the volume of the outlet chamber 62 such that upon movement of the displacement piston element from the second piston position to the first piston position, a volume decrease of the inlet chamber 34 is greater than a volume increase of the outlet chamber 62 (as seen from the configuration of the piston arrangement in Fig. 1). Spakowski further discloses that in the first piston position the displacement element 30 is inserted with the first piston region into the inlet chamber 34, and in the second piston position the displacement piston element 30 is inserted with a second piston region into the outlet chamber 62. Spakowski also discloses that the displacement piston element 30 providing the first piston region and the second piston region, and also a displacement section 26 which upon movement of the displacement piston element 30 from the first piston position to the second piston position is inserted into the outlet chamber 62. Spakowski further discloses the displacement piston element 30 is displaceable in a piston housing 24 with cylindrical aperture; wherein in the piston housing 24 the region of the inlet chamber 34 into which the first piston region 30 is inserted in the first piston position, and the region of the outlet chamber 62 into which the second piston region 26 is inserted in the second piston position, are at least partially formed. Spakowski also discloses that the piston housing 24 is at least regionally surrounded by a chamber housing (see 40 or cap surrounding 28) and wherein the inlet chamber 34 and/or the

Art Unit: 3746

outlet chamber 62 is/are formed at least partially between the piston housing 24 and the chamber housing (see 40 or cap surrounding 28). Spakowski further discloses that the first valve arrangement 66 is constructed as a check valve and has a spring 68 prestressed valve member 66. However, Spakowski does not teach the following claimed limitations taught by Oh.

Oh teaches a linear compressor comprising a displacement piston 60 that reciprocates between first and second positions, and inlet chamber C and an outlet chamber S. Oh also teaches a first valve arrangement that includes a valve seat 200 and a valve member 300 which can be pressed against the valve seat wherein the valve seat 200 of the first valve arrangement is provided on a housing 90. Oh further teaches that a fluid supply duct 60a is provided in the displacement piston element 60, and has a mouth at the front of the piston 60 to the inlet chamber C (see Fig. 7A), and can be closed by a second valve arrangement 63 which permits fluid exchange substantially only from the fluid supply duct to the inlet chamber C. Oh also teaches that the displacement piston element 60 has electromagnetically effective drive (see Fig. 1, and col. 1, lines 56-59), specifically a coil/armature arrangement (15, 65, 62).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the tube pump apparatus of Spakowski by placing the fluid supply duct within the displacement piston element and having a mouth and check valve at its front end in order to minimize re-expansion resulting from over compression (Oh, col. 3, lines 27-29).

Art Unit: 3746

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spakowski 6,186,118 in view of Oh 6,152,710, and in further view of Bez 4,560,327.

Spakowski in view of Oh discloses the invention as discussed above. However, Spakowski in view of Oh does not teach the following claimed limitations taught by Bez.

Bez teaches a porting and ducting arrangement including, a pair of reciprocatory piston and cylinder units 12, 12', a piston displacement element 36, 36', and inlet chamber 33, 33', and an outlet chamber 42, 42'. Bez further teaches the displacement piston element having, in a first piston region, a first displacement surface 25, 25' effective upon movement of the displacement piston element in the direction toward the first piston position, and having a second displacement surface (see surface of piston head that falls on 32, Fig. 1) effective for movement of the displacement piston element in the direction toward the second piston position; and wherein the first displacement surface is greater than the second displacement surface, having a mutual surface ratio of 2:1 (disclosed by Fig. 1). Bez teaches that this would be advantageous because the first displacement surface is the one responsible for pumping the fluid, therefore, the larger this surface is, the more fluid that can be pumped.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify metering pump of Spakowski in view of Oh, by modifying the fluid displacement surfaces, as taught by Bez, in order to allow the maximum amount of fluid to be pumped each rotation, while still maintaining a steady piston movement from first, to second, and back to first position, and also allowing a space for fluid to pass through the chambers.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spakowski 6,186,118 in view of Oh 6,152,710, and in further view of Falk 6,796,777.

Spakowski in view of Oh discloses the invention as discussed above. However, Spakowski in view of Oh does not teach the following claimed limitations taught by Falk.

Falk teaches an electromagnetic pump 10 including, a cylindrical body or housing 32 a fluid receiving chamber 14, a fluid output chamber 16, and a plunger portion 59. Falk further discloses that the pump has an electromagnetically effective drive, wherein the drive includes a coil/armature arrangement (see col. 7, lines 8-13) the armature 45 being formed by the piston element. Falk teaches that this would be advantageous because it would allow for fewer parts and faster manufacturing time.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify metering pump of Spakowski in view of Oh, by having an electromagnetically effective drive, wherein the drive includes a coil/armature arrangement the armature being formed by the piston element, as taught by Falk, in order to have fewer moving parts in the final construction of the pump, therefore decreasing the likelihood of failure.

### ***Response to Arguments***

6. Applicant's arguments filed 1/04/2007 have been fully considered but they are not persuasive.

7. Applicant's arguments with respect to claims 1, 2, 4, 5, 7, 8, and 10-14 have been considered but are moot in view of the new ground(s) of rejection.

**Conclusion**

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Bertheaud whose telephone number is (571) 272-3476. The examiner can normally be reached on M-F 9am - 5pm.

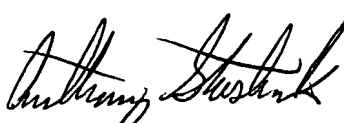
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on (571) 272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 3746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
PJB 4/24/07

  
ANTHONY D. STASHICK  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700